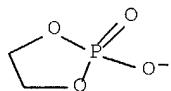


L10 ANSWER 1 OF 18 CAPLUS COPYRIGHT 2003 ACS on STN  
 AN 1999:660530 CAPLUS  
 DN 131:351382  
 TI Formation of a stabilized phospholane salt  
 AU Lewis, Andrew L.; Stokes, Howard C. K.  
 CS Biocompatibles Ltd. Farnham Business Park, Farnham, Surrey, GU9 8QL, UK  
 SO Journal of Chemical Research, Synopses (1999), (10), 612-613  
 CODEN: JRPSDC; ISSN: 0308-2342  
 PB Royal Society of Chemistry  
 DT Journal  
 LA English  
 AB N,N-Substituted amines (as illustrated using TMEDA) will react with a short chain 2-alkoxy-2-oxo-1,3,2-dioxaphospholane, to form a stabilized phospholane salt and not the corresponding phosphobetaine as anticipated.  
 IT 250709-49-0P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (prep. of)  
 RN 250709-49-0 CAPLUS  
 CN Ethanaminium, 2-(dimethylamino)-N,N,N-trimethyl-, salt with 2-hydroxy-1,3,2-dioxaphospholane 2-oxide (1:1) (9CI) (CA INDEX NAME)  
 CM 1  
 CRN 48086-02-8  
 CMF C2 H4 O4 P



CM 2

CRN 44838-93-9  
 CMF C7 H19 N2

$\text{Me}_3^+ \text{N} - \text{CH}_2 - \text{CH}_2 - \text{NMe}_2$

RE.CNT 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L10 ANSWER 2 OF 18 CAPLUS COPYRIGHT 2003 ACS on STN  
AN 1995:721693 CAPLUS

DN 123:122274

TI Removal of suspended phosphate ester unsaturated monomers from wastewater

IN Konishi, Ichiro

PA Nippon Zeon Co, Japan

SO Jpn. Kokai Tokkyo Koho, 5 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

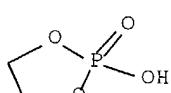
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 07136663	A2	19950530	JP 1993-316082	19931122
PRAI JP 1993-316082		19931122		
AB	The process consists of treating the wastewater with successive coagulants and anionic polyacrylamides. The process is useful for treatment of wastewater from photog. developing.			
IT 166599-30-0	RL: REM (Removal or disposal); PROC (Process) (removal of suspended phosphate ester unsatd. monomers from wastewater from photog. developing using coagulant and anionic polyacrylamide)			
RN 166599-30-0	CAPLUS			
CN 2-Propenoic acid, methyl ester, polymer with 1,3-butadiene, diethenylbenzene, ethenylbenzene and 2-hydroxy-1,3,2-dioxaphospholane 2-oxide (9CI) (CA INDEX NAME)				

CM 1

CRN 6711-47-3

CMF C2 H5 O4 P



CM 2

CRN 1321-74-0

CMF C10 H10

CCI IDS



2 [ D1—CH=CH2 ]

CM 3

CRN 106-99-0  
CMF C4 H6

H<sub>2</sub>C=CH—CH=CH<sub>2</sub>

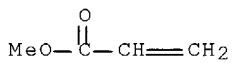
CM 4

CRN 100-42-5  
CMF C8 H8

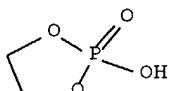
H<sub>2</sub>C=CH—Ph

CM 5

CRN 96-33-3  
CMF C4 H6 O2

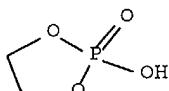


L10 ANSWER 3 OF 18 CAPLUS COPYRIGHT 2003 ACS on STN  
AN 1985:560603 CAPLUS  
DN 103:160603  
TI Exocyclic cleavage in the alkaline hydrolysis of methyl ethylene phosphate. Evidence against the significance of stereoelectronic acceleration in reactions of cyclic phosphates  
AU Kluger, Ronald; Thatcher, Gregory R. J.  
CS Dep. Chem., Univ. Toronto, Toronto, ON, M5S 1A1, Can.  
SO Journal of the American Chemical Society (1985), 107(21), 6006-11  
CODEN: JACSAT; ISSN: 0002-7863  
DT Journal  
LA English  
OS CASREACT 103:160603  
AB The products of the reaction of Me ethylene phosphate with OH<sup>-</sup> under a variety of conditions were detd. by <sup>1</sup>H and <sup>31</sup>P NMR, with and without rapid quenching. Reactions of the products were also analyzed. The products of exocyclic cleavage, MeOH and ethylene phosphate, were produced in the initial reaction to the extent that was reported by R. Kluger, et al., in 1969. Subsequent reaction of the ring-cleaved product was too slow to account for the initial MeOH prodn. Ring strain and substituent apicophilicities, rather than orbital interactions, account for the substantial differences in the reactivity of phosphate esters.  
IT 50484-75-8P  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(prepn. of)  
RN 50484-75-8 CAPLUS  
CN 1,3,2-Dioxaphospholane, 2-hydroxy-, 2-oxide, sodium salt (9CI) (CA INDEX  
NAME)



● Na

L10 ANSWER 4 OF 18 CAPLUS COPYRIGHT 2003 ACS on STN  
 AN 1984:551950 CAPLUS  
 DN 101:151950  
 TI A facile synthesis of cyclic phosphodiesters  
 AU Jankowska, Jadwiga; Stawinski, Jacek  
 CS Inst. Bioorg. Chem., Pol. Acad. Sci., Poznan, 61-704, Pol.  
 SO Synthesis (1984), (5), 408-10  
 CODEN: SYNTBF; ISSN: 0039-7881  
 DT Journal  
 LA English  
 OS CASREACT 101:151950  
 GI For diagram(s), see printed CA Issue.  
 AB Treating diols with phosphoryl tristriazole I gave cyclic phosphodiesters  
 II [X = bond, CH<sub>2</sub>, (CH<sub>2</sub>)<sub>2</sub>, (CH<sub>2</sub>)<sub>3</sub>, CH<sub>2</sub>OCH<sub>2</sub>; R<sub>1</sub>, R<sub>2</sub> = H, Me] in 47-95% yields. Also prepd. were 5'-O-dimethoxytritylnucleoside 2',3'-cyclic phosphodiesters III (Y = O, NBz).  
 IT 56366-55-3P 92136-94-2P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (prep. of)  
 RN 56366-55-3 CAPLUS  
 CN 1,3,2-Dioxaphospholane, 2-hydroxy-, 2-oxide, barium salt (9CI) (CA INDEX NAME)

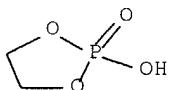


●1/2 Ba

RN 92136-94-2 CAPLUS  
 CN 1,3,2-Dioxaphospholane, 2-hydroxy-, 2-oxide, compd. with cyclohexanamine (1:1) (9CI) (CA INDEX NAME)

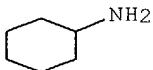
CM 1

CRN 6711-47-3  
 CMF C<sub>2</sub> H<sub>5</sub> O<sub>4</sub> P



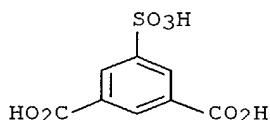
CM 2

CRN 108-91-8  
 CMF C<sub>6</sub> H<sub>13</sub> N



L10 ANSWER 5 OF 18 CAPLUS COPYRIGHT 2003 ACS on STN  
 AN 1984:492393 CAPLUS  
 DN 101:92393  
 TI Adhesives for sealing computer information paper  
 PA Cemedine Co., Ltd., Japan; Gooh Chemical Industry Co., Ltd.  
 SO Jpn. Kokai Tokkyo Koho, 5 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 FAN.CNT 1

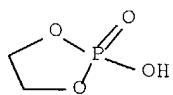
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 58088755	A2	19830526	JP 1981-186936	19811124
	JP 62027706	B4	19870616	
PRAI JP 1981-186936		19811124		
AB Water-sol. polyesters having softening temp. (t) >160.degree. and contg. CO <sub>2</sub> ZCO <sub>2</sub> unit (Z = MSO <sub>3</sub> -substituted arom ring; M = alkali metal) are useful as adhesives for sealing computer information papers. Thus, 272 parts di-Me terephthalate was polycondensed with 205 parts ethylene glycol and 52 parts Na 5-sulfoisophthalate to give a polyester (I) [78009-45-7] (t = 200.degree.). Printability and sealability were good on coating the back side of a computer paper with an aq. dispersion contg. 25% (solids) I and drying the paper.				
IT 91628-78-3	RL: TEM (Technical or engineered material use); USES (Uses) (adhesives, for sealing of computer paper)			
RN 91628-78-3 CAPLUS				
CN 1,3-Benzenedicarboxylic acid, 5-sulfo-, trisodium salt, polymer with dimethyl 1,4-benzenedicarboxylate, 1,2-ethanediol and 2-hydroxy-1,3,2-dioxaphospholane 2-oxide (9CI) (CA INDEX NAME)				
CM 1				
CRN 56896-98-1				
CMF C8 H6 O <sub>7</sub> S . 3 Na				



●3 Na

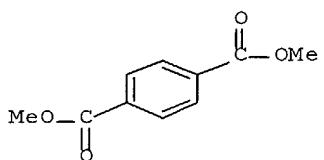
CM 2

CRN 6711-47-3  
CMF C2 H5 O<sub>4</sub> P



CM 3

CRN 120-61-6  
CMF C<sub>10</sub> H<sub>10</sub> O<sub>4</sub>

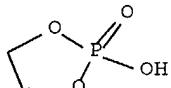


CM 4

CRN 107-21-1  
CMF C<sub>2</sub> H<sub>6</sub> O<sub>2</sub>

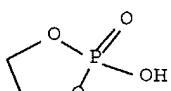
HO—CH<sub>2</sub>—CH<sub>2</sub>—OH

L10 ANSWER 6 OF 18 CAPLUS COPYRIGHT 2003 ACS on STN  
 AN 1978:596164 CAPLUS  
 DN 89:196164  
 TI Synthesis and study of the properties of potassium and ammonium salts of glycophosphoric acid  
 AU Borisov, V. M.; Pogodilova, E. G.; Illarionov, V. V.; Maslennikov, B.  
 M.; Nечаева, V. V.  
 CS USSR  
 SO Zhurnal Prikladnoi Khimii (Sankt-Peterburg, Russian Federation) (1978),  
 51(7), 1465-70  
 CODEN: ZPKHAB; ISSN: 0044-4618  
 DT Journal  
 LA Russian  
 AB Mono- and di-substituted K and NH<sub>4</sub> salts of glycophosphoric acid [6711-47-3] were obtained by reacting the acid with resp. amts. of 50% KOH or NH<sub>4</sub>OH. The yield of reaction products was .apprx.97%, and in both cases the reaction proceeded through 2 stages giving in the 1st one monosubstituted salts of lesser and in 2nd one disubstituted salts of higher solv. H<sub>2</sub>O solns. of the latter salts formed no ppts. with Mg<sup>2+</sup>, Al<sup>3+</sup>, or Fe<sup>3+</sup>, and H<sub>2</sub>O solns. of monosubstituted salts formed no ppts. also with Ca<sup>2+</sup> solns. The compn. of the K and NH<sub>4</sub> salts is presented and their possible structures are discussed. The thermal and x-ray anal. of the salts showed that di-substituted glycophosphates formed a different cryst. structure than similar orthophosphate salts.  
 IT 53236-53-6P  
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
 (prepn. and properties of)  
 RN 53236-53-6 CAPLUS  
 CN 1,3,2-Dioxaphospholane, 2-hydroxy-, 2-oxide, ammonium salt (9CI) (CA INDEX NAME)



● NH<sub>3</sub>

IT 68292-98-8P  
 RL: PREP (Preparation) (prepn. of)  
 RN 68292-98-8 CAPLUS  
 CN 1,3,2-Dioxaphospholane, 2-hydroxy-, 2-oxide, potassium salt (9CI) (CA INDEX NAME)



● K

L10 ANSWER 7 OF 18 CAPLUS COPYRIGHT 2003 ACS on STN

AN 1978:507960 CAPLUS

DN 89:107960

TI Effect of sodium cyanide in a polar aprotic medium on some cyclic phosphates. A new intermediate for the synthesis of monosubstituted derivatives of tetracoordinated phosphorus acid anhydrides: the sodium salt of .beta.-cyanoethyl-N,N-dimethylamidophosphate

AU Chabrier, Pierre; Nguyen Thanh Thuong; Chabrier, Pierre Etienne; Chassignol, Marcel

CS Lab. Chim. Org. Phosphore, Cent. Marcel-Delepine, Orleans, Fr.

SO Comptes Rendus des Seances de l'Academie des Sciences, Serie C: Sciences

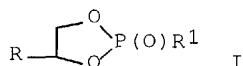
Chimiques (1978), 286(15), 429-32

CODEN: CHDCAQ; ISSN: 0567-6541

DT Journal

LA French

GI



AB The reaction of esters I ( $R = H, Me$ ;  $R_1 = \text{alkoxy, NMe}_2$ ) with NaCN gave  $R_1P(O)(OCH_2CH_2CN)ONa$  (II). II ( $R = H, R_1 = NMe_2$ ) was prepd. and treated with  $R_2P(O)(OH)_2$  ( $R_2 = \text{PhO, BuC}_6H_4O, Ph, MeCH:CH, 1,2\text{-epoxy-1-Pr, MeC.tpbond.C}$ ) to give the resp.  $R_2P(O)(ONa)OP(O)(ONa)_2$ .

IT **50484-75-8P**

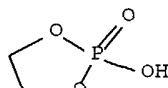
RL: SPN (Synthetic preparation); PREP (Preparation)  
(prepn. of)

RN 50484-75-8 CAPLUS

CN 1,3,2-Dioxaphospholane, 2-hydroxy-, 2-oxide, sodium salt (9CI) (CA

INDEX

NAME)



● Na

L10 ANSWER 8 OF 18 CAPLUS COPYRIGHT 2003 ACS on STN  
AN 1977:405021 CAPLUS

DN 87:5021

TI Unstable intermediates. Part 169. Electron capture processes in organic

phosphates: an electron spin resonance study

AU Nelson, Deanna; Symons, Martyn C. R.

CS Dep. Chem., Univ. Leicester, Leicester, UK

SO Journal of the Chemical Society, Perkin Transactions 2: Physical Organic

Chemistry (1972-1999) (1977), (3), 286-93

CODEN: JCPKBH; ISSN: 0300-9580

DT Journal

LA English

AB Org. phosphates were exposed to  $^{60}\text{Co}$  .gamma.-rays at 77 and 313 K. Monoalkyl phosphates (as the Na, K, Mg, or Ca salts) gave alkyl radicals on irradn. at 77 K but a low yield of .bul.PO<sub>3</sub><sup>2-</sup> was detected at 313 K. Dialkyl phosphates gave the phosphoryl radicals .bul.P(OR)<sub>2</sub>O<sup>2-</sup> and alkyl radicals at 77 K; some Na and K salts also gave phosphoronyl radicals .bul.P(OR)<sub>2</sub>O<sup>2-</sup>. Trialkyl phosphates at 77 K gave mainly .bul.P(OR)<sub>3</sub>O<sup>-</sup>, although phosphoryl radicals were also detected. Solns. of the phosphates

in CD<sub>3</sub>OD were also studied.

IT 50484-75-8

RL: RCT (Reactant); RACT (Reactant or reagent)

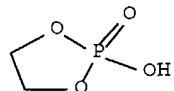
(radiolysis of, ESR of radicals from)

RN 50484-75-8 CAPLUS

CN 1,3,2-Dioxaphospholane, 2-hydroxy-, 2-oxide, sodium salt (9CI) (CA

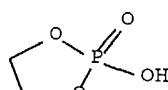
INDEX

NAME)



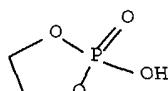
● Na

L10 ANSWER 9 OF 18 CAPLUS COPYRIGHT 2003 ACS on STN  
 AN 1975:492692 CAPLUS  
 DN 83:92692  
 TI Enthalpies of hydrolysis of acyclic, monocyclic, and glycoside cyclic phosphate diesters  
 AU Gerlt, John A.; Westheimer, F. H.; Sturtevant, Julian M.  
 CS James Bryant Conant Lab., Harvard Univ., Cambridge, MA, USA  
 SO Journal of Biological Chemistry (1975), 250(13), 5059-67  
 CODEN: JBCHA3; ISSN: 0021-9258  
 DT Journal  
 LA English  
 AB The enthalpies of hydrolysis of acyclic, monocyclic, and glycoside cyclic phosphate diesters was measured by flow microcalorimetry using a phosphohydrolase isolated from Enterobacter aerogenes as catalyst. The values obtained (kcal/mole) at 25.degree. for Na salt were: diethyl phosphate, - 1.8; ethylene phosphate, - 6.4; trimethylene phosphate, - 3.0; tetramethylene phosphate, -2.2; methyl .beta.-D-ribofuranoside cyclic 3:5-phosphate, -11.1; methyl .alpha.-D-glucopyranoside cyclic 4,6-phosphate, -6.3; and cyclic adenosine 3',5'-monophosphate (5'-ester bond), - 11.1 (10-3M Mg<sup>2+</sup>). The enthalpy of hydrolysis of the 3'-ester bond of cyclic adenosine 3',5'-monophosphate(10-3M Mg<sup>2+</sup>) was revised to - 11.1 kcal/mole from the value of - 13.2 kcal/mole reported previously. All these values pertain to the hydrolysis of singly charged diesters to form singly charged monoesters. The data for the acyclic and monocyclic phosphodiesters are in qual. agreement with their hydrolytic reactivities. The enthalpies measured for the hydrolysis of the glycoside cyclic phosphates cannot now be explained on the basis of their structures or reactivities. Changes in the heat capacity, .DELTA.Cp, for some of the hydrolytic reactions were also measured.  
 IT 50484-75-8  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (hydrolysis of, thermodn. of)  
 RN 50484-75-8 CAPLUS  
 CN 1,3,2-Dioxaphospholane, 2-hydroxy-, 2-oxide, sodium salt (9CI) (CA INDEX NAME)



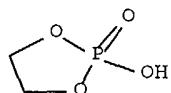
● Na

IT 56366-55-3  
 RL: RCT (Reactant); RACT (Reactant or reagent) (reaction of, with sodium sulfate)  
 RN 56366-55-3 CAPLUS  
 CN 1,3,2-Dioxaphospholane, 2-hydroxy-, 2-oxide, barium salt (9CI) (CA INDEX NAME)



● 1/2 Ba

L10 ANSWER 10 OF 18 CAPLUS COPYRIGHT 2003 ACS on STN  
AN 1974:477403 CAPLUS  
DN 81:77403  
TI New method of preparation for phosphorylcholine, phosphorylhomocholine,  
and their derivatives  
AU Nguyen Thanh Thuong; Chabrier, Pierre  
CS Lab. Chim. Org. Phosphore, Cent. Marcel-Delepine, Orleans, Fr.  
SO Bulletin de la Societe Chimique de France (1974), (3-4, Pt. 2), 667-71  
CODEN: BSCFAS; ISSN: 0037-8968  
DT Journal  
LA French  
GI For diagram(s), see printed CA Issue.  
AB Dioxaphospholanes and dioxaphosphorinanes (I and II; R = substituted  
amino, aryloxy, 3,3,3-trihaloethoxy, PhCH<sub>2</sub>O) reacted with Me<sub>3</sub>N to give  
phosphorylcholines RP(O)(O-)O(CH<sub>2</sub>)<sub>2</sub>N+Me<sub>3</sub> and RP(O)(O-)O(CH<sub>2</sub>)<sub>3</sub>N+Me<sub>3</sub>,  
resp.  
IT 53236-53-6P  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(prepn. of)  
RN 53236-53-6 CAPLUS  
CN 1,3,2-Dioxaphospholane, 2-hydroxy-, 2-oxide, ammonium salt (9CI) (CA  
INDEX NAME)



● NH<sub>3</sub>

L10 ANSWER 11 OF 18 CAPLUS COPYRIGHT 2003 ACS on STN  
AN 1974:463592 CAPLUS  
DN 81:63592

TI Transformation of phosphorus(III) derivatives into phosphorus(V)  
derivatives by reaction with trimethylaniline oxide. I.

Dioxaphospholanes

and 1,3,2-dioxaphosphorinanes

AU Brault, Jean F.; Chabrier, Pierre

CS Lab. Chim. Org. Phosphore, Cent.-Marcel-Delepine, Orleans, Fr.

SO Bulletin de la Societe Chimique de France (1974), (3-4, Pt. 2), 677-80  
CODEN: BSCEAS; ISSN: 0037-8968

DT Journal

LA French

GI For diagram(s), see printed CA Issue.

AB Dioxaphospholanones I (R = H, R1 = Et, C<sub>6</sub>H<sub>4</sub>OAc-.omicron., Ph; R = Me, R1 =

= Et) and dioxaphosphorinanones II (R = H, R1 = Ph; R = R1 = Me) were  
prepd. by oxidizing the dioxaphospholanes or dioxaphosphorinanes with  
Me<sub>3</sub>NO, with quick distn. to remove the Me<sub>3</sub>N. When the Me<sub>3</sub>N was not  
removed Me<sub>3</sub>N+CH<sub>2</sub>CH<sub>2</sub>OP(O)(O-)R1 (R = H, R1 = OEt, OCHMe<sub>2</sub>, OC<sub>8</sub>H<sub>17</sub>, OPh; R =

= Me, R1 = OPh) were formed. Salts of I and II (R1 = NMe<sub>4</sub>) were obtained  
when the 2-methoxydioxaphospholanes or -phosphorinanes were treated with  
Me<sub>3</sub>NO under pressure at 60.degree..

IT **41821-73-2P**

RL: SPN (Synthetic preparation); PREP (Preparation)  
(prepn. of)

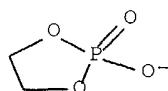
RN 41821-73-2 CAPLUS

CN Methanaminium, N,N,N-trimethyl-, salt with 2-hydroxy-1,3,2-dioxaphospholane 2-oxide (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 48086-02-8

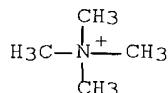
CMF C<sub>2</sub> H<sub>4</sub> O<sub>4</sub> P



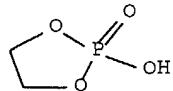
CM 2

CRN 51-92-3

CMF C<sub>4</sub> H<sub>12</sub> N

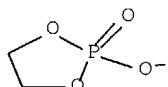


L10 ANSWER 12 OF 18 CAPLUS COPYRIGHT 2003 ACS on STN  
AN 1974:7692 CAPLUS  
DN 80:7692  
TI Enthalpy of hydrolysis of simple phosphate diesters  
AU Sturtevan, Julian M.; Gerlt, J. A.; Westheimer, F. H.  
CS Kline Chem. Lab., Yale Univ., New Haven, CT, USA  
SO Journal of the American Chemical Society (1973), 95(24), 8168-9  
CODEN: JACSAT; ISSN: 0002-7863  
DT Journal  
LA English  
AB The enthalpies of hydrolysis .DELTA.H of 4 phosphate diesters were  
detd.,  
in Pipes (P) or Tris (T) buffers, by using flow calorimetry. The values  
of .DELTA.H (-kcal/mole) are: Na(CH<sub>2</sub>)<sub>2</sub>PO<sub>4</sub>, 7-11; Na(CH<sub>2</sub>)<sub>2</sub>PO<sub>4</sub>(T), 6.5;  
Na(CH<sub>2</sub>)<sub>3</sub>PO<sub>4</sub>(P), 3.7; Na(CH<sub>2</sub>)<sub>3</sub>PO<sub>4</sub>(T), 3.4; Na(CH<sub>2</sub>)<sub>4</sub>PO<sub>4</sub> (P), 2.62; and  
NaEt<sub>2</sub>PO<sub>4</sub>(O), 2.66.  
IT **50484-75-8**  
RL: PRP (Properties)  
(heat of hydrolysis of)  
RN 50484-75-8 CAPLUS  
CN 1,3,2-Dioxaphospholane, 2-hydroxy-, 2-oxide, sodium salt (9CI) (CA  
INDEX  
NAME)



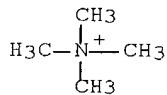
● Na

L10 ANSWER 13 OF 18 CAPLUS COPYRIGHT 2003 ACS on STN  
 AN 1973:405316 CAPLUS  
 DN 79:5316  
 TI New method of preparation of cyclic diesters or orthophosphoric acid  
 AU Chabrier, Pierre; Brault, Jean Francois  
 CS Lab. Chim. Org. Phosphore, CNRS, Orleans, Fr.  
 SO Comptes Rendus des Seances de l'Academie des Sciences, Serie C:  
 Sciences  
     Chimiques (1973), 276(13), 1135-7  
     CODEN: CHDCAQ; ISSN: 0567-6541  
 DT Journal  
 LA French  
 GI For diagram(s), see printed CA Issue.  
 AB Tetramethylammonium phosphates RO(R<sub>1</sub>O)P(O)ONMe<sub>4</sub> (I, RR<sub>1</sub> = CH<sub>2</sub>CH<sub>2</sub>,  
 CH<sub>2</sub>CHMe,  
 CHMeCHMe, CMe<sub>2</sub>CMe<sub>2</sub>, (CH<sub>2</sub>)<sub>3</sub>, CH<sub>2</sub>CH<sub>2</sub>CHMe, CHMeCH<sub>2</sub>CHMe, CH<sub>2</sub>CMe<sub>2</sub>CH<sub>2</sub>) and the  
 spirodimer II were prepd. in 73-91% yield by treating RO(R<sub>1</sub>O)POMe with  
 Me<sub>3</sub>NO. Phosphorinanes I yielded the free acids RO(R<sub>1</sub>O)P(O)OH on  
 treatment  
     with Amberlite IR 120 H.  
 IT 41821-73-2P  
     RL: SPN (Synthetic preparation); PREP (Preparation)  
         (prepn. of)  
 RN 41821-73-2 CAPLUS  
 CN Methanaminium, N,N,N-trimethyl-, salt with 2-hydroxy-1,3,2-  
 dioxaphospholane 2-oxide (1:1) (9CI) (CA INDEX NAME)  
 CM 1  
 CRN 48086-02-8  
 CMF C<sub>2</sub> H<sub>4</sub> O<sub>4</sub> P



CM 2

CRN 51-92-3  
 CMF C<sub>4</sub> H<sub>12</sub> N



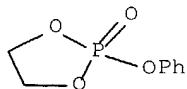
L10 ANSWER 14 OF 18 CAPLUS COPYRIGHT 2003 ACS on STN  
 AN 1972:420390 CAPLUS  
 DN 77:20390  
 TI Copolymers of cyclic phosphates and epoxides or aldehydes  
 IN Vandenberg, Edwin J.  
 PA Hercules Inc.  
 SO U.S., 5 pp. Continuation-in-part of U.S. 3,520,849 (CA 73;67314f).  
 CODEN: USXXAM  
 DT Patent  
 LA English  
 FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI US 3655586	A	19720411	US 1970-11338	19700213
PRAI US 1970-11338		19700213		

AB Epichlorohydrin (I), ethylene oxide, or trioxane was copolymerd. with 3 phospholanes and 2 phosphaindans to give linear polymers, useful in the manuf. of fire-resistant materials. Thus, PhMe contg. 5 parts I and 5 parts 2-phenoxy-2-oxo-1,3,2-dioxaphospholane (II) was mixed with Et<sub>2</sub>O-heptane contg. a Et<sub>3</sub>Al-water-Ac<sub>2</sub>CH<sub>2</sub> reaction product 19 hr at 30.deg. to give a cryst. copolymer [26471-35-2] with a reduced sp. viscosity of 3.0 (0.1% in Ac<sub>2</sub>CH<sub>2</sub>-alpha.-chloronaphthalene soln. at 100.deg.) contg. 8.6% II. Other copolymers similarly prep'd. were 2-ethoxy-2-oxo-1,3,2-dioxaphospholane-trioxane copolymer [26471-37-4] and 2-ethoxy-2-oxo-1,3,3-dioxaphosphaindane-trioxane copolymer [35110-80-6].  
 IT 26471-35-2P 26471-36-3P  
 RL: IMF (Industrial manufacture); PREP (Preparation)  
 (manuf. of, fire-resistant)  
 RN 26471-35-2 CAPLUS  
 CN 1,3,2-Dioxaphospholane, 2-phenoxy-, 2-oxide, polymer with (chloromethyl)oxirane (9CI) (CA INDEX NAME)

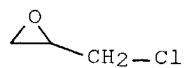
CM 1

CRN 16492-16-3  
 CMF C<sub>8</sub> H<sub>9</sub> O<sub>4</sub> P



CM 2

CRN 106-89-8  
 CMF C<sub>3</sub> H<sub>5</sub> Cl O



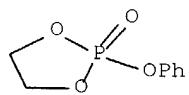
RN 26471-36-3 CAPLUS

CN 1,3,2-Dioxaphospholane, 2-phenoxy-, 2-oxide, polymer with oxirane (9CI)  
(CA INDEX NAME)

CM 1

CRN 16492-16-3

CMF C8 H9 O4 P



CM 2

CRN 75-21-8

CMF C2 H4 O



L10 ANSWER 15 OF 18 CAPLUS COPYRIGHT 2003 ACS on STN  
AN 1970:467314 CAPLUS

DN 73:67314

TI Normally solid organic phosphorus polymers

IN Vandenberg, Edwin J.

PA Hercules Inc.

SO U.S., 13 pp.

CODEN: USXXAM

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 3520849	A	19700721	US 1967-690433	19671214
	BE 725477	A	19690613	BE 1968-725477	19681213
	FR 1601254	A	19700810	FR 1968-1601254	19681213
	BR 6804864	A0	19730308	BR 1968-204864	19681213
	NL 6818060	A	19690617	NL 1968-18060	19681216
PRAI	US 1967-690433		19671214		

AB The title polymers were prep'd. by polymg. cyclic phosphates and (or) phosphorothionates with an epoxide, aldehyde, cyclized aldehyde, or oxethane in the presence of an alkylmagnesium catalyst. The products were

useful as stabilizers for thermoplastic resins for improved flame resistance and low-temp. properties. They could be hydrolyzed or saponified.

to yield water-sol. polymers for thickeners and protective colloids. Thus, 2-phenoxy-2-thiono-1,3,2-dioxaphospholane was polymd. in the presence of Et<sub>2</sub>Mg·0.6NH<sub>3</sub> and the product pptd. from Et<sub>2</sub>O. Similarly used

were 2-phenoxy-2-oxo-1,3,2-dioxaphospholane, epichlorohydrin, and trioxane, among others.

IT 26471-35-2P 26471-36-3P

RL: PREP (Preparation)

(prepn. of, organometallic catalysts for)

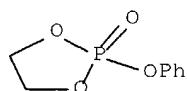
RN 26471-35-2 CAPLUS

CN 1,3,2-Dioxaphospholane, 2-phenoxy-, 2-oxide, polymer with (chloromethyl)oxirane (9CI) (CA INDEX NAME)

CM 1

CRN 16492-16-3

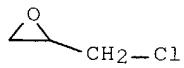
CMF C<sub>8</sub> H<sub>9</sub> O<sub>4</sub> P



CM 2

CRN 106-89-8

CMF C<sub>3</sub> H<sub>5</sub> Cl O



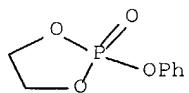
RN 26471-36-3 CAPLUS

CN 1,3,2-Dioxaphospholane, 2-phenoxy-, 2-oxide, polymer with oxirane (9CI)  
(CA INDEX NAME)

CM 1

CRN 16492-16-3

CMF C8 H9 O4 P



CM 2

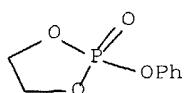
CRN 75-21-8

CMF C2 H4 O



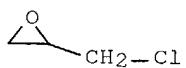
L10 ANSWER 16 OF 18 CAPLUS COPYRIGHT 2003 ACS on STN  
 AN 1970:44557 CAPLUS  
 DN 72:44557  
 TI Phosphorus-containing polymer solid under normal conditions  
 IN Vandenberg, Edwin J.  
 PA Hercules Inc.  
 SO Ger. Offen., 60 pp.  
 CODEN: GWXXBX  
 DT Patent  
 LA German  
 FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI DE 1814831		19691211		
PRAI US		19671214		
AB 2-Phenoxy - 2 - thiono - 1,3,2 - dioxaphospholane (I), 2 - methoxy-2 - th				
iono - 1,3,2 - dioxaphospholane, 2 - ethoxy - 2-oxo-1,3,2-dioxaphospholane, and similar compds. are homopolymerd. or copolymerd. with epichlorohydrin, ethylene oxide, or trioxane, to prep. solid polymers contg. P in the polymer chains. The polymers are thermoplastic, elastomeric, fire resistant, etc., depending on their compn. The polymn.				
catalysts are the reaction products of organoaluminum compds. and water or				
of organomagnesium compds. and NH <sub>3</sub> . The polymers are useful as fibers, films, protective colloids, thickeners, heat stabilizers for synthetic resins, additives for improving the flow properties of greases, plasticizers, additives for improving the fire resistance and low-temp. properties of resins, etc. Thus, 10 parts I was polymerd. for 19 hr at 30.degree. in the presence of 0.004 mole % 1.0:0.6 Et <sub>2</sub> Mg-NH <sub>3</sub> prep'd. by mixing a 0.5M Et <sub>2</sub> Mg soln. (in Et <sub>2</sub> O) with NH <sub>3</sub> at 0.degree. and aging the soln. 18-20 hr at 30.degree.. The polymn. was stopped with 5 parts acetylacetone, and the polymer was pptd. with Et <sub>2</sub> O. The polymer was a white solid softening at 65-70.degree. and having reduced sp. v viscosity 1.4 (0.1% soln. in CHCl <sub>3</sub> at 25.degree.). The polymer is esp. useful for prep'g. films and fibers.				
IT 26471-35-2P 26471-36-3P				
RL: PEP (Physical, engineering or chemical process); PREP (Preparation); PROC (Process)				
(manuf. of, catalysts for)				
RN 26471-35-2 CAPLUS				
CN 1,3,2-Dioxaphospholane, 2-phenoxy-, 2-oxide, polymer with (chloromethyl)oxirane (9CI) (CA INDEX NAME)				
CM 1				
CRN 16492-16-3				
CMF C8 H9 O <sub>4</sub> P				



CM 2

CRN 106-89-8  
CMF C3 H5 Cl O

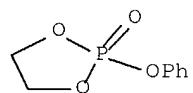


RN 26471-36-3 CAPLUS

CN 1,3,2-Dioxaphospholane, 2-phenoxy-, 2-oxide, polymer with oxirane (9CI)  
(CA INDEX NAME)

CM 1

CRN 16492-16-3  
CMF C8 H9 O4 P



CM 2

CRN 75-21-8  
CMF C2 H4 O



L10 ANSWER 17 OF 18 CAPLUS COPYRIGHT 2003 ACS on STN  
AN 1961:81254 CAPLUS  
DN 55:81254  
OREF 55:15328d-i,15329a  
TI Oxidation of cyclic phosphites to cyclic phosphates  
AU Keay, L.; Crook, E. M.  
CS Univ. Coll., London  
SO Journal of the Chemical Society, Abstracts (1961) 710-15  
CODEN: JCSAAZ; ISSN: 0590-9791  
DT Journal  
LA Unavailable  
AB The occurrence and synthesis of cyclic phosphates and the factors influencing ring formation, ring size, and stability were discussed with special reference to the degree of lability of the esters. Present methods for synthesis and their limitations were assessed. Et esters of cyclic phosphates with 5- and 6-membered rings were prep'd. by the oxidn. of the corresponding phosphites with HgO or N2O4. The cyclic phosphates were also prep'd. by oxidn. of cyclic phosphorochloridites and hydrolysis without isolation of the intermediate phosphorochloridate. Ethylene phosphorochloridite (I), b20 48.degree., trimethylene phosphorochloridite (II), b19 68-9.degree., Et ethylene phosphite (III), b19 57-8.degree., and Et trimethylene phosphite (IV), b16 68-9.degree., were prep'd. by a standard method. Ph trimethylene phosphite (V), prep'd. from II and PhOH in the presence of NHEt2 at 0.degree., b0.3 81-2.degree.. Et3PO3 (16.6 g.) in 75 ml. Me2CO treated portionwise with 35 g. yellow HgO, left several hrs. at room temp. and the product distd. gave 15.5 g. Et3PO4, b24 106-8.degree.. In similar expts., (iso-Pr)3PO3 gave 81% (iso-Pr)3PO4, b18 100-2.degree., and Ph3PO3 gave 61% Ph3PO4, m. 49-50.degree.. Ph3PO3 (16.6 g.) in 50 cc. CHCl3 treated in the cold with N2O4, left 1 hr. at room temp. and distd. gave 15.7 g. Ph3PO4. Di-Et phosphorochloridite (15.6 g.) in 50 ml. CHCl3 oxidized as above gave 10.1 g. di-Et phosphorochloridate, b18 94-6.degree.. III (27.2 g.) in 100 ml. Me2CO oxidized by 75 g. HgO and left overnight at room temp. gave 8.5 g. Et ethylene phosphate, b0.7-0.8 106-8.degree.. III (15.0 g.) in 50 ml. CHCl3 treated dropwise with N2O4 and left 0.5 hrs. gave 7 g. Et ethylene phosphate. IV (15 g.) in 100 ml. Me2CO treated with HgO gave 8.7 g. Et trimethylene phosphate (VI), b0.1 114-15.degree.. IV (18 g.) with 100 ml. CHCl3 and N2O4 at -20.degree. gave 12.8 g. VI. V (10 g.) oxidized with N2O4 as described above and the solvent removed gave a brown oil, which was shaken with Al2O3 to give 8.2 g. Ph trimethylene phosphate, m. 74-5.degree.. VI (0.7 g.) heated 10 min. at 80.degree. with 0.5 g. Ba(OH)2.8H2O in 5 ml. H2O gave 0.4 g. Ba Et 3-hydroxypropyl phosphate, II (7 g.) in anhyd. CHCl3 oxidized with N2O4 and the residual oil poured into cold H2O, neutralized with guanidine carbonate, and stirred 1 hr. gave 5 g. guanidinium trimethylene phosphate (VIa). I (6.3 g.) in CHCl3 oxidized with N2O4 and the residual oil shaken with 16.7 g. AgOAc gave 4 g. Ag ethylene phosphate

(VII). VII (2.3 g.) in H<sub>2</sub>O added to 0.95 g. guanidine HCl gave 1.73 g. guanidinium ethylene phosphate. 0.1M Cyclic phosphate soln. (5 ml.) (either VIa or VII) was mixed with 5 ml. 0.1 M HCl, an aliquot removed immediately and the pH adjusted to 4.5. The secondary phosphate dissochn.

present was estd. The remainder of the soln. was then placed on a const.

temp. bath and titrated at intervals. The following results were obtained

[substance, min. at 37.degree. (VIa at 100.degree.), and % of hydrolysis given]: VII, 0, 0; VII, 5, 27; VII, 15, 48; VII, 25, 63; VII, 360, 100; VIa, 0, 0; VIa, 2, 5; VIa, 5, 10; VIa, 24, 25. Ascending chromatography was carried out on paper with 50% iso-PrOH-H<sub>2</sub>O. The R<sub>f</sub> values were given

for a no. of the above compds.

IT 118020-06-7, Ethylene phosphate, compd. with guanidine  
(prepn. of)

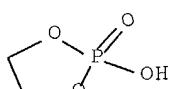
RN 118020-06-7 CAPLUS

CN Ethylene phosphate, compd. with guanidine (6CI) (CA INDEX NAME)

CM 1

CRN 6711-47-3

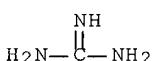
CMF C<sub>2</sub> H<sub>5</sub> O<sub>4</sub> P



CM 2

CRN 113-00-8

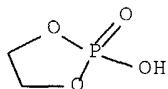
CMF C H<sub>5</sub> N<sub>3</sub>



L10 ANSWER 18 OF 18 CAPLUS COPYRIGHT 2003 ACS on STN  
 AN 1957:12416 CAPLUS  
 DN 51:12416  
 OREF 51:2537c-f  
 TI Barium ethylene phosphate  
 AU Kumamoto, Junji; Cox, James R., Jr.; Westheimer, F. H.  
 CS Harvard Univ.  
 SO J. Am. Chem. Soc. (1956), 78, 4858-60  
 CODEN: JACSAT; ISSN: 0002-7863  
 DT Journal  
 LA Unavailable  
 GI For diagram(s), see printed CA Issue.  
 AB Barium ethylene phosphate, Ba(CH<sub>2</sub>CH<sub>2</sub>PO<sub>4</sub>)<sub>2</sub> (I), has been made by soln. of 6.5 g. Ba(BrCH<sub>2</sub>CH<sub>2</sub>OPO<sub>3</sub>) in 100 ml. H<sub>2</sub>O, warming to 75.degree. for 15 min. while maintaining the pH at 7 with Ba(OH)<sub>2</sub>, followed by increase of pH to 8.5, filtration, evapn. to dryness, soln. in 10 ml. H<sub>2</sub>O and 10 ml. EtOH. Cryst. Ba(HOCH<sub>2</sub>CH<sub>2</sub>OPO<sub>3</sub>) was filtered off after 30 min., the filtrate dild. with 250 ml. abs. EtOH, and 3 g. I was obtained as flat hexagonal plates by repeated crystn. from 50% EtOH and abs. EtOH (to remove BaBr<sub>2</sub>). The structure of I is shown to be (O.CH<sub>2</sub>.CH<sub>2</sub>.O.PO<sub>2</sub>) Ba by analysis of the Ba and cyclohexylammonium salts, mol. wt. of the Ba salt, by absence of inflection in electrometric titration at pH 7 (indicates a secondary ester), infrared spectrum, and by other evidence. Treatment of I with cyclohexylammonium sulfate gave the corresponding salt, m. 168.degree.. In alk. soln. salts of ethylene phosphate are hydrolyzed to salts of hydroxyethyl phosphate at rates about 107 times the hydrolysis rates of the corresponding salts of dimethyl phosphate.  
 IT 92136-94-2, Ethylene phosphate, compd. with cyclohexylamine (prepn. of)  
 RN 92136-94-2 CAPLUS  
 CN 1,3,2-Dioxaphospholane, 2-hydroxy-, 2-oxide, compd. with cyclohexanamine (1:1) (9CI) (CA INDEX NAME)

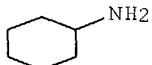
CM 1

CRN 6711-47-3  
 CMF C<sub>2</sub> H<sub>5</sub> O<sub>4</sub> P

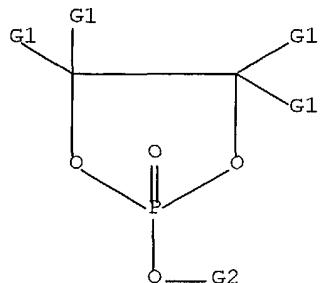


CM 2

CRN 108-91-8  
 CMF C<sub>6</sub> H<sub>13</sub> N



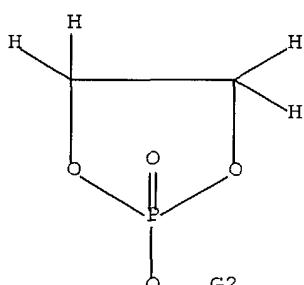
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=> d l1; d l5; d his; log y  
L1 HAS NO ANSWERS  
L1 STR
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G1 C,H  
G2 H, Ph

Structure attributes must be viewed using STN Express query preparation.

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L5 HAS NO ANSWERS  
L5 STR
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G1 C,H  
G2 H, Ph

Structure attributes must be viewed using STN Express query preparation.

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FILE 'REGISTRY' ENTERED AT 14:54:02 ON 07 AUG 2003

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L1 STRUCTURE uploaded  
L2 11 S L1  
L3 223 S L1 FUL
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FILE 'CAPLUS' ENTERED AT 14:55:59 ON 07 AUG 2003  
L4 269 S L3

FILE 'STNGUIDE' ENTERED AT 14:56:43 ON 07 AUG 2003

FILE 'REGISTRY' ENTERED AT 14:57:25 ON 07 AUG 2003

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L5 STRUCTURE uploaded  
L6 0 S L5 SAM SUB=L3  
L7 16 S L5 FUL SUB=L3
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L8 78 S L7

L9 FILE 'REGISTRY' ENTERED AT 14:58:36 ON 07 AUG 2003  
12 S L7 AND 2-5/NC

L10 FILE 'CAPLUS' ENTERED AT 14:59:00 ON 07 AUG 2003  
18 S L9

COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	82.48	274.14
DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)	SINCE FILE ENTRY	TOTAL SESSION
CA SUBSCRIBER PRICE	-11.72	-11.72

STN INTERNATIONAL LOGOFF AT 14:59:54 ON 07 AUG 2003